

## Exclara Product Brief

### EXM016

#### *140 Watt Dimmable LED Ballast*

#### General Description

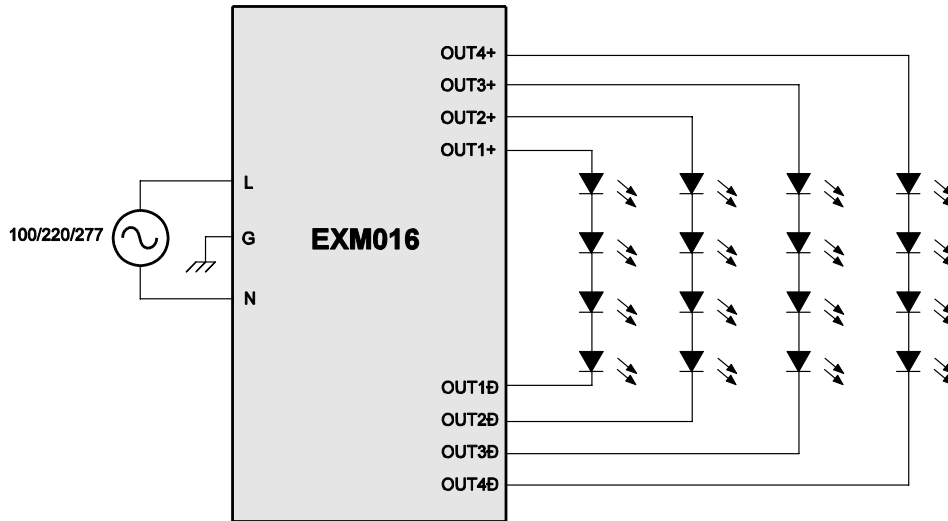
The EXM016 is a highly integrated, easy to use LED driver. It has an output capacity of 140W that is distributed among four independent channels/LED strings. Distributing power among multiple LED strings eliminates variances due to temperature and LED component tolerances of the current of each LED string. This ensures more even light distribution and superior long term reliability than traditional LED drivers. An integrated temperature sensor monitors the case temperature to prevent over-temperature conditions above 85°C.



**EXM016**

Features	Applications
<ul style="list-style-type: none"> <li>• 140W total output power</li> <li>• Universal input: 110VAC/220VAC/277VAC</li> <li>• Four constant current channels for improved performance and reliability</li> <li>• Integrated PFC</li> <li>• High efficiency: &gt; 86%</li> <li>• Over-voltage and short-circuit protection</li> <li>• Dimming control port</li> <li>• Available in multiple output connector configurations</li> </ul>	<ul style="list-style-type: none"> <li>• Commercial lighting</li> <li>• Industrial lighting</li> <li>• Street lighting</li> <li>• Outdoor lighting</li> </ul>

## Application Diagram



**Figure 1. EXM016 Application**

## Application Information

### Output Current and Voltage

The EXM016 employs a unique architecture to efficiently distribute power to 4 output channels. The EXM016 ensures the output current in each channel is precisely regulated and identical. The output voltage of each channel can be between 25V and 59V. This greatly simplifies applications involving series-connected LEDs, and those using LEDs of dissimilar types. For different current set points please contact Exclara.

### Over-Temperature Sense

The EXM016 monitors the case temperature for over-temperature conditions. When the case temperature exceeds 85°C, the output current is reduced.

### Fault Protection

The EXM016 offers protection against short-circuit and open-circuit conditions. For short-circuit conditions on any given channel the EXM016 will continue to provide its rated current into the load until the faulty load condition is removed at which time the EXM016 will auto-restart.

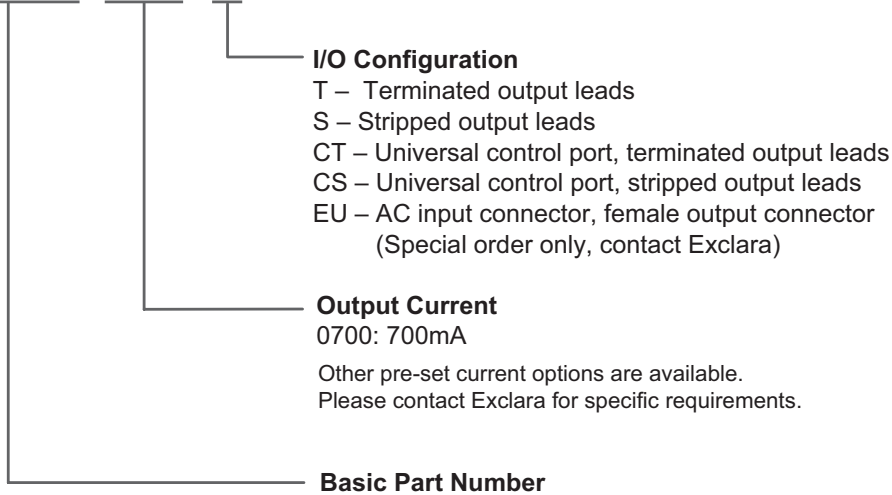
### Dimming Control Interface (-Cx Option)

The EXM016 has the means to reduce the output current of all channels hence having the effect of dimming the light source connected to its outputs. It employs a 2-wire control interface.



## Ordering Information

### EXM016-xxxx-xx



### Example:

EXM016-0700-T: 700mA, terminated output leads

## Absolute Maximum Ratings

Exceeding the Absolute Maximum Ratings will damage the device.

Parameter	Rating
Input Voltage (rms)	340V (0.5 sec)
Output Current per Channel	Self Limited

## Key Electrical Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Units
$V_{IN}$	Input Voltage (rms)		90		305	VAC
$freq_{IN}$	Input Frequency		47		63	Hz
PF	Power Factor	$V_{IN} = 110VAC$ at rated load $V_{IN} = 220VAC$ at rated load $V_{IN} = 220VAC$ at 100W load $V_{IN} = 277VAC$ at rated load	0.98 0.93 0.90 0.86	0.99 0.94 0.92 0.88		W / VA

Symbol	Parameter	Conditions	Min	Typ	Max	Units
THD	Total Harmonic Distortion	$V_{IN} = 110VAC$		5.2		%
		$V_{IN} = 220VAC$		13.0		
		$V_{IN} = 220VAC$ at 87% max load		12.0		
		$V_{IN} = 277VAC$ at rated load		18.0		
$I_{IN}$	Input Current	At 90VAC			1.7	A
$P_{OUT}$	Total Power output				140	W
$\eta$	Efficiency	$I_o$ at rated load, $V_{IN} = 90VAC$		86		%
$I_o$	Output Current <sup>(1)</sup>	per channel		700		mA

**Notes:**

1. Specifications refer to each channel unless state otherwise. Contact Exclara for different output current settings.

**Environmental**

Parameter	Value
Storage Temperature	-30°C to 105°C
Operating Ambient Temperature (Ta)	-20°C to 50°C
Operating Case Temperature (TC)	-20°C to 85°C
Enclosure	IP67
MTBF	450,000 hours @ 25°C per Telcordia Issue 2
Humidity	0% to 100% non-condensing
ROHS Compliant	Yes
Weight (kg)	1.33

**Safety**

Parameter	Value
Safety	ENEC, UL/IEC60950-1 (LPS Classification), EN61347-2-13

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